R3G250-RR04-N3

EC centrifugal fan - RadiCal

backward curved, single inlet

for railway applications

R3G250-RR04-N3 ebmpapst Datasheet FansCo

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Nominal data

Type	**R3G250-RR04-N3**
Motor	**M3G084-DF**

Phase		3~
Nominal voltage	VAC	480
Nominal voltage range	VAC	400 .. 510
Frequency	Hz	50/60
Type of data definition		ml
Speed (rpm)	min^{-1}	4000
Power input	W	615
Current draw	A	0.85
Min. ambient temperature	°C	-40
Max. ambient temperature	°C	70

ml = Max. load · me = Max. efficiency · fa = Running at free air · cs = Customer specs · cu = Customer unit
Subject to alterations

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Technical features

Mass	5.12 kg
Size	250 mm
Motor size	84
Surface of rotor	Coated in black
Material of impeller	PA UL94 V0 plastic
Housing material	Die-cast aluminium
Number of blades	7
Direction of rotation	Clockwise, seen on rotor
Type of protection	IP55
Insulation class	"F"
Humidity (F) / environmental protection class (H)	H3
Max. permissible ambient motor temp. (transp./ storage)	+80 °C
Min. permissible ambient motor temp. (transp./storage)	-40 °C
Mounting position	Rotor on top
Condensation drainage holes	None
Operation mode	S1
Motor bearing	Ball bearing
Technical features	- Output 10 VDC, max. 10 mA - Alarm relay - Integrated PID controller - Run monitoring - Output limit - Motor current limit - Emergency operation - PFC, passive - RS485 MODBUS RTU - Soft start -Maximum EEPROM write cycles 100,000 - Control input 0-10 VDC / PWM - Control interface with SELV potential safely disconnected from the mains - Overvoltage detection - Over-temperature protected electronics / motor - Line undervoltage / phase failure detection
EMC directives	According to EN 50121-3-2
Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)	<= 3.5 mA
Motor protection	Thermal overload protector (TOP) wired internally
Cable exit	Lateral
Protection class	I (if protective earth is connected by customer)
Product conforming to standard	EN 15085-1, CPC3: 2007; EN 45545-2, HL3: 2013; EN 50155: 2008; EN 61373, Cat. 1B: 2010; CE
Approval	EAC

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Remark	Prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if voltage (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their increased insulation, meaning they only have basic insulation The SELV property (increased insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay.

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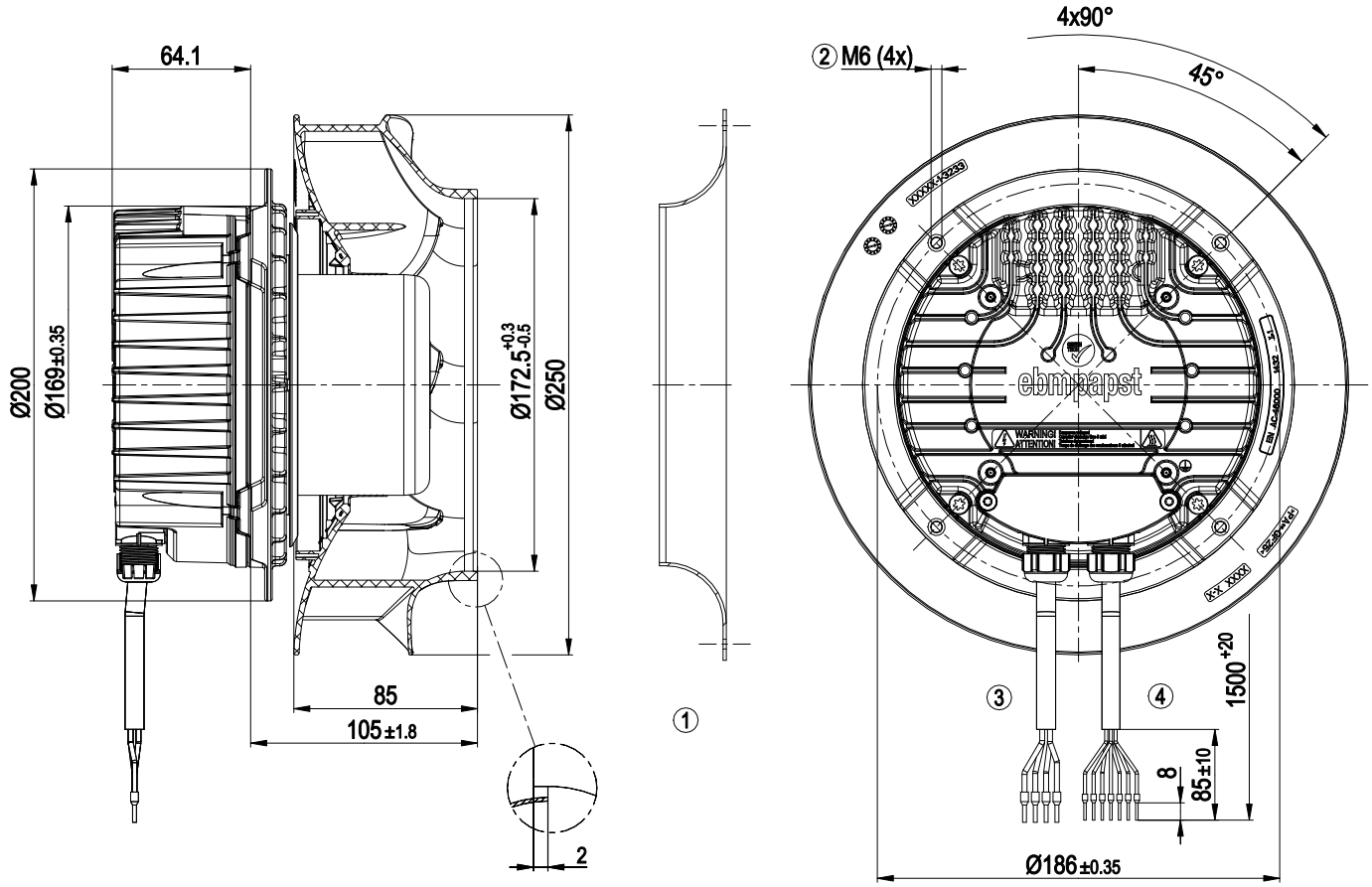
Product drawing



1	Accessory part: Inlet nozzle 96359-2-4013 not included in scope of delivery
2	Thread reach max. 16 mm
3	Connection line, halogen-free, railway application EN 45545, 4G 1.5 mm²
	4x core-end sleeve
4	Connection line, halogen-free, railway application EN 45545, 7x 0.5 mm²
	7x core-end sleeve

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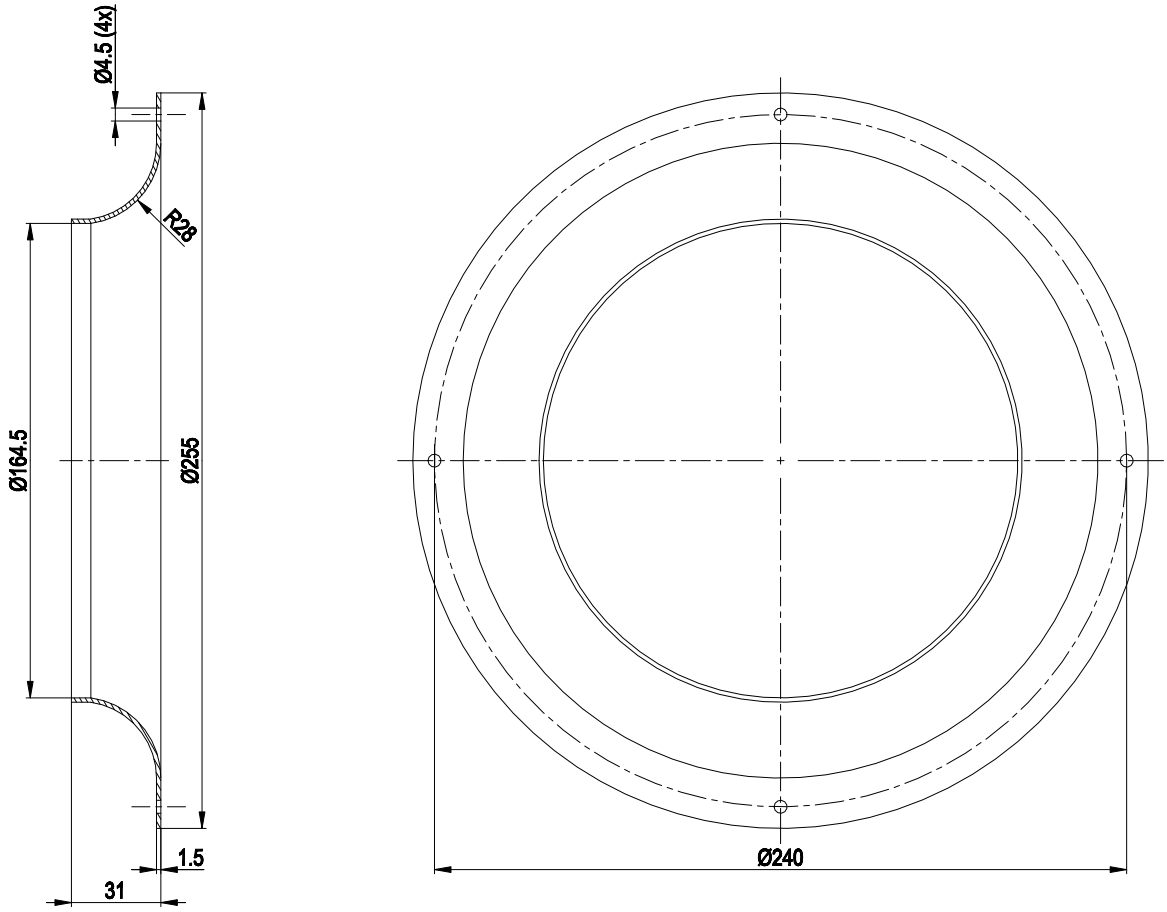
Accessory part



Accessory part: Inlet nozzle 96359-2-4013 not included in scope of delivery

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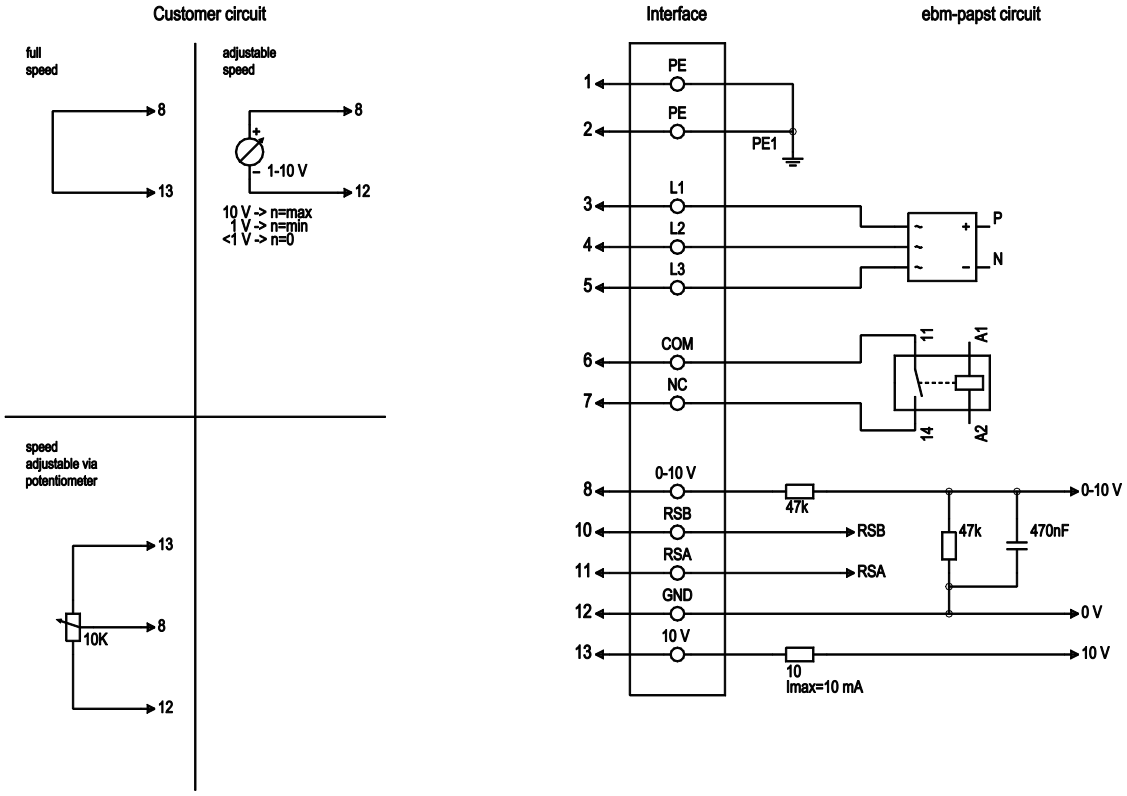
Connection screen



No.	Conn.	Designation	Colour	Function / assignment
1	1	PE	green/yellow	Protective earth
1	2	PE	-	not brought out via lead
1	3	L1	black	Power supply, phase, 50/60 Hz
1	4	L2	blue	Power supply, phase, 50/60 Hz
1	5	L3	brown	Power supply, phase, 50/60 Hz
2	6	COM	grey	Status relay, floating status contact, common connection, contact rating, 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation with respect to control interface, basic insulation on mains side according to EN 50124-1
2	7	NC	orange	Status relay, floating status contact, break for failure, contact rating 250 VAC / max. 2 A (AC1), min. 1 mA / 5 VDC, reinforced insulation on control interface side, basic insulation on supply side according to EN 50124-1
2	8	0-10V	yellow	Analogue input (set value) SELV, 0-10 V, Ri=100kΩ, parametrisable curve
2	10	RSB	brown	RS485 interface for MODBUS, RSB; SELV
2	11	RSA	white	RS485 interface for MODBUS, RSA; SELV
2	12	GND	blue	Signal ground for control interface, SELV
2	13	+10V	red	Fixed voltage output 10 VDC, +10 V +/-3 %, max. 10 mA, short-circuit-proof, power supply for ext. devices (e.g. potentiometer); SELV

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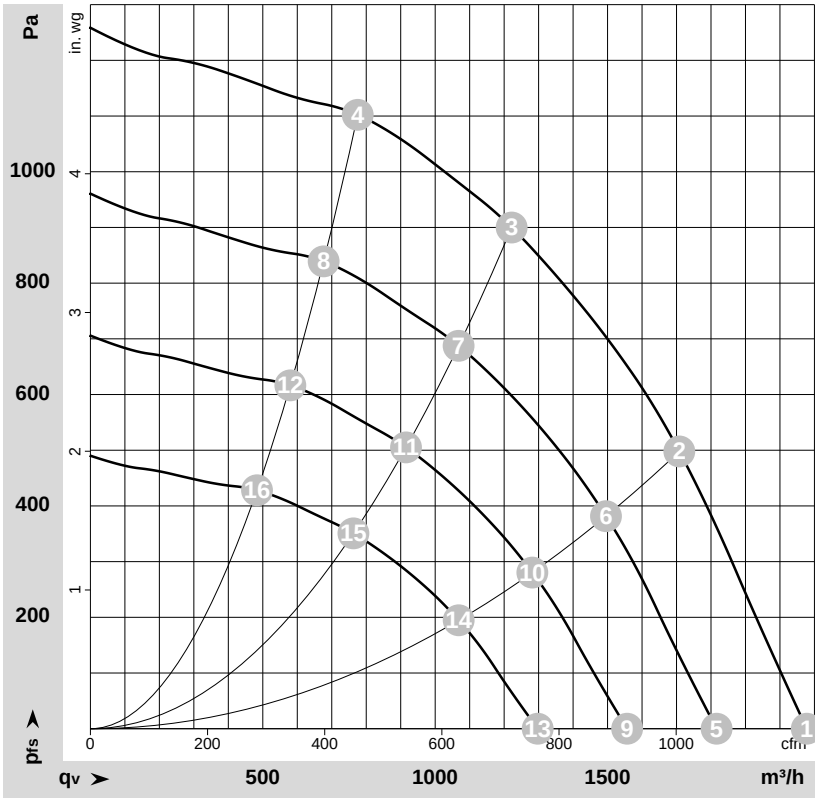
Charts: Air flow 60 Hz



ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-158298-1

Air performance measured as per ISO 5801 Installation category A. For detailed information on the measuring set-up, please contact ebm-papst. Suction-side noise levels: LwA measured as per ISO 13347 / LpA measured with 1m distance to fan axis. The values given are valid under the measuring conditions mentioned above and may vary according to the actual installation situation. With any deviation from the standard set-up, the specific values have to be checked and reviewed with the unit installed.

Measured values

	Conn.	U	f	n	P_{ed}	I	LpA_{in}	LwA_{in}	q_V	p_{fs}	q_V	p_{fs}
		V	Hz	min^{-1}	W	A	dB(A)	dB(A)	m^3/h	Pa	cfm	in. wg
1	3~	480	60	4000	484	0.70	79	87	2080	0	1225	0.00
2	3~	480	60	4000	566	0.80	76	84	1710	500	1005	2.01
3	3~	480	60	4000	615	0.85	74	82	1220	900	720	3.61
4	3~	480	60	4000	547	0.77	78	86	775	1100	455	4.42
5	3~	480	60	3500	323	0.47	76	84	1815	0	1070	0.00
6	3~	480	60	3500	380	0.53	73	80	1495	382	880	1.53
7	3~	480	60	3500	404	0.56	71	79	1070	689	630	2.77
8	3~	480	60	3500	363	0.51	75	82	675	841	400	3.38
9	3~	480	60	3000	203	0.30	72	80	1555	0	915	0.00
10	3~	480	60	3000	239	0.34	69	76	1280	280	755	1.12
11	3~	480	60	3000	255	0.36	67	75	915	506	540	2.03
12	3~	480	60	3000	229	0.32	71	78	580	618	340	2.48
13	3~	480	60	2500	118	0.17	68	75	1295	0	765	0.00
14	3~	480	60	2500	139	0.19	64	72	1070	195	630	0.78
15	3~	480	60	2500	147	0.21	62	70	765	351	450	1.41
16	3~	480	60	2500	132	0.19	66	74	485	429	285	1.72

Conn. = Connection · U = Supply voltage · f = Frequency · n = Speed (rpm) · P_{ed} = Power input · I = Current draw · LpA_{in} = Sound pressure level inlet side · LwA_{in} = Sound power level inlet side
q_V = Air flow · p_{fs} = Pressure increase